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REPORT

OF THE

COMMITTEE ON STATE AFFAIRS,

TO WHOM WAS REFERRED SO MUCH OF THE

GOVERNOR'S MESSAGE AS RELATES TO THE GEOLOGICAL SURVEY.

IN SENATE, FEBRUARY 12, 1857.

1,000 copies ordered printed.

The committee to whom was referred so much of the Governor's Message as refers to the Geological Survey, would submit the following

REPORT:

Although the State of Wisconsin has proved its appreciation of the importance of such accurate scientific surveys as have for the last twenty or thirty years engaged the attention of the older States and aided vastly in developing their resources, your committee have deemed it appropriate to present a brief summary of the advantages to be expected from the continuance and enlargement of our efforts in this direction.

The growth and prosperity of the State depends almost equally upon the rapid development of her vast mineral resources, and of her agriculture, and neither of these great interests can expand independently of the other. We are bound to consider how they may be most ecomically developed, not with the false economy whose present saving must be loss in the future, but with wiser foresight, to prevent an erroneous outlay of labor and capital now, andprovide for posterity by transmitting to them an inheritance increased a thousand fold in value.

We would recommend an accurate and extended Geological survey, because it promises us,

1st. The surest and speediest means for realizing our mineral wealth.

2d. It promises us inestimable advantages in the development of our agriculture.

It is obvious that we must at the very outset, know where to look, and how to look for the iron, the copper and the lead, in which we know Wisconsin abounds, for our building materials and fertilizers, and we know that we must resort for this knowledge to the science which embodies all that is known of the earth's surface, which has explored it in all regions—in mountains, in valleys—and even the depths of the sea.

The Geologist alone can tell us in what rocks the ores are found, at what depth of overlaying strata, the direction of metalic veins, and on what mineral substances the fertility of our soils depend. The discovery of valuable mineral substances, the construction of great national works, architecture, the arts, and most of the manufacturing interests, are all more or less connected with a knowledge of the materials which form the earth's surface; are all more or less dependent on the science of Geology. So universally is this truth acknowledged that no intelligent capitalist now invests his funds at the movement of the divining rod, or places much reliance upon chance discovery, but he follows in the track of Geological exploration, and with the aid of the scientific miner is able to ascertain with something like certainty the extent and value of ores, and the probable cost of working them.

We believe that no surer means could be devised to invite to ourselves the capital of older states than a survey which should determine the geological formation of each district, and its mineral contents, and at the same time give a sufficiently detailed examination of ore beds, rocks, clays, peats and marls, to make its result of value to every land holder. The permanancy and certainty which such a survey would give to our mining interest has been most happily realized by the state of North Carolina, Pennsylvania and New York. Before the Geological survey in

Pennsylvania the amount of coal production varied greatly from year to year, from the fact that many investments proved entirely unproductive. In 1838 there was a decrease of 141,000 tons. Since the survey the amount has invariably increased, and so rapidly that from the anthracite mines alone it amounts to 4,000,000 tons. In one year it increased 1,000,000 tons.

The survey of North Carolina, in the discoveries of the first year, increased the revenues of the state to five times the cost of the whole survey, and in subsequent years produced still greater results. England has spent millions in her Geological survey, and the results have enabled her to direct the commerce of the world. By thus developing the mineral wealth of our State, we shall find the value of our lands greatly increased. The rise in real estate in several counties in Ohio immediately after their survey was variously estimated at from $100,000 to $500,000, according to their means of working the mineral treasures which were disclosed. The discovery of minerals in Polk county, Tennessee, made the lands of that county worth $10,000,000 more than before.

The older states have found their mining operations to involve an enormous system of waste, which will be easy for us to avoid by the early analysis of our ores and rocks. In North Carolina a gentleman had worked an ore of gold which yielded about $40 per ton; on examination the ore proved to be copper pyrites of good quality worth $100 per ton. In another case an ore of gold which yielded little more than $2 per bushel gave an analysis of more than $30 per bushel.

It is easy for us to see that the survey will enable us to prevent waste of outlay where important results are not likely to follow. Scientific analysis will save to us all the valuable constituents of our ores, and give us some definite knowledge of the strength and durability of our building materials before they are employed in our public and private edifices, in our bridges, our aqueducts and public works.

The survey will also confer a lasting benefit upon our rail-roads by showing the amount of material which will require transportation; while at the same time it directs the tide of emigration to those points where labor will prove most valuable to the State, and remuneration to the individual.

But in as much as nine-tenths of our population are engaged in tilling the soil, we would recommend the continuance and extension of the survey, principally for the benefits it will confer upon our Agriculture. It is important for us, at the very outset of our career, to know what are the agricultural capacities of Wisconsin, and what the best methods of developing, preserving and increasing them. So far our system, if system it may be called, is the old exhaustive system which has rolled the tide of emigration towards the virgin prairies and fertile openings of the west, leaving behind it a land dispoiled of its forests, and impoverished in its soil. We are liable to forget that though nature has been most lavish in her gifts to us, she requires that these be used in accordance with her laws, if they prove to us sources of perpetual blessings. Our soils are not richer in food producing elements than those of Duchess county, and the Genesee valley were in the days of their primeval fertility. In Duchess county the yield of wheat originally averaging forty bushels to the acre, has diminished to five, and if we are to pursue the same system of cropping, the facilities of transportion afforded by our railroads will tend to deteriorate our soils with much greater rapidity.

Various estimates have been made of the annual decrease in fertility of cultivated lands, the lowest of which proves to be equal to an annual loss of six per cent. on their value, and this is not theory but a statement abundantly supported by fact.

Improvement in culture was the immediate result of the Geological survey of New York. Farmers were instructed by it how to restore the exhausted fatness of the soil, how best to sustain and increase its productiveness, and the annual increase of the production has amounted to $50,000,000. The increase in the two staples *corn* and *hay* alone, amounting to nearly $1,000,000 per annum.

Happily for us, we have yet nothing to do with the work of restoration, and our efforts can be concentrated upon the improvement and preservation of what we possess. It may be safely affirmed that no state in the Union surpasses Wisconsin in healthfulness of its climate, the fertility of its soil and its general adaptation to agricultural pursuits. Shall we transmit this rich inheritance unimpaired to posterity? Shall the soil retain its fertility and continue its abundant yield, or shall we by an improvident agriculture, bring it to the impoverished condition of the "old Dominion" and other of the older states. We must decide the question early.

The soil of Western and Central Europe, of far less natural capabilities than ours, is made to yield double the produce. The increase of population has compelled the governments to make use of all the appliances of science in skilfully conducted surveys and in the establishment of agricultural schools, where the young farmer can acquire the experience of all ages in matters pertaining to his pursuits.

" How shall we preserve and increase the fertility of our soils," is evidently the *great question* in our political economy. We know that every bushel of wheat sent out of the State, carries with it a certain amount upon which that fertility depends, that are transmitting its very essence to an eastern market. How shall the ingredients be restored? What are the materials we can most economically use, and the best method of their application. These are questions which a careful examination of our soils and subsoils, the lime stone, the beds of marl and other soil making material the State affords, can alone answer.

The granitic and basaltic hills of New England, are, through the influence of atmospheric agencies, gradually giving up in a soluble form their potash and other minerals essential to the growth of crops to the soil of their hill sides and vallies, thus renewing to some extent their exhausted materials.

Our prairies and openings have no such source of renovation, and must depend upon art. Skillfully conducted analyses, and a recognition of the physical conditions essential to fertility are of the highest importance to the preservation and improvement of our soil.

After a full and somewhat protracted investigation of this subject, your committee unanimously recommend the passage of the accompanying bill.

M. M. DAVIS,
L. HANCHETT,
TEMPLE CLARK,
Committee on State Affairs.